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ABSTRACT

This guide provides information for teachers to use in teaching about liver wellness, hepatitis B, and substance abuse. The guide includes effective motivational techniques to help students understand how valuable their liver is to their health and well being. It also provides basic information to help students avoid liver damaging behaviors, such as use of drugs, alcohol, and tattoos, and promotes vaccination against hepatitis B. Messages are tailored for children in kindergarten through sixth grade and seventh through twelfth grade. Teaching tips are provided along with information on liver wellness stated especially for each age group. Topics cover: general information on the liver and its importance to health, preventing liver damage, steps to maintain good health, and suggested activities. A chart on several hepatitis viruses is included. (ND)

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ED 412 196

Primer for Teachers

Quick & easy

Liver wellness, hepatitis B and substance abuse prevention messages

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Primer for Teachers

Quick and easy liver wellness, hepatitis B and substance abuse prevention messages.

Purpose:

To help students understand how valuable their liver is to their health and well being, and to provide basic information to help them avoid liver damaging behaviors and accept hepatitis B vaccination.

Knowing how limited your time is to focus on health related topics, we have compiled a few "tried and true," memorable, motivational techniques to help you impress your students with the importance of their liver and to accept responsibility for taking care of it, encouraging them to avoid liver damaging activities (use of drugs, alcohol, tattoos, etc.) and promoting vaccination against hepatitis B.

Messages are tailored to children in K through 6th grade and 7th grade through 12th.

Please review all the messages for each group as they may give you some suggestions for use with students in your class. The following is general information about the liver.

Introductory Information

Useful for all ages

Show the class a football, pointing out that the liver, in an adult, is approximately the same size as the football, and the size of a grapefruit in young children. It is tucked up under their ribs on the right side of their body. You can't hear it or feel it and most likely you won't even know it is there. *Because the liver is a non-complaining organ*, you probably won't know it is in trouble 'til it is badly damaged. . .

How Valuable is Your Liver to Your Life?

■ Without it you wouldn't have been able to get out of bed this morning. You'd be limp as a puppet. Running the bases or cheering the team on would be impossible.

■ If your liver didn't produce bile, you wouldn't be able to digest your food properly or absorb the nutrients you need to stay alive, alert and healthy.

■ Without your liver, your body couldn't make the protein necessary to build your muscles. You'd be weak, thin and puny.

■ If it didn't make clotting factors, you could bleed all day from a small cut or scratch.

■ Without your liver, you wouldn't be able to filter out the toxins and poisonous chemicals in polluted air, aerosol sprays or noxious fumes you breathe in or get on your skin . . . and especially the toxins in drugs and alcohol.

■ Without your liver making immune factors, you'd be a "sitting duck" for every germ and virus that surrounds you.

Your liver is your internal chemical power plant. It converts food to energy and stores it in liver cells (like a battery) until you need it. It makes bile to rid your body of poisonous toxins, and helps fight off germs and viruses that can make you sick.

Your liver refines and detoxifies everything you eat, breathe and absorb through your skin. It can be damaged by any one or all of the following:

Disinfectants, solvents, and bug sprays

How would you feel if someone sprayed a disinfectant in your face. . .or if you couldn't get away to breathe fresh air?

Toxins in drugs

Doctors' order drugs in specific amounts to avoid liver damage. Taking drugs you don't know anything about could cause permanent liver damage.

Alcoholic beverages

Alcohol contains toxins that can kill liver cells. The more you drink, the more liver cells are destroyed.

Hepatitis viruses

Hepatitis viruses invade liver cells, destroy them internally, and attack other liver cells to continue their destruction throughout the liver.

Talking to Teens

This is the most vulnerable age group, due to high risk behaviors including: experimenting with sex; use and abuse of drugs and alcohol; having tattoos and body piercing procedures; and other unanticipated exposure to hepatitis B.

Providing basic facts that teens can relate to, helps them to remember and motivates them to respond to suggestions.

■ Exposure to hepatitis viruses and potentially dangerous chemicals can cause permanent irreversible liver cell damage.

■ When a liver cell is damaged, scar tissue, called cirrhosis, replaces the healthy cells.

■ Hepatitis B virus, which is 100 times more infectious than AIDS, can easily enter the blood stream through mucous membranes during unprotected sexual contact, toothbrushes shared with an infected person, through **the skin** when it is punctured by infected needles, IV drug paraphernalia, razors, nail clippers, body piercing and tattooing instruments.

Note:

■ Have students identify mucous membranes.

■ In one teaspoon of infected blood there are 5 - 10 particles of the AIDS virus, compared to millions of the hepatitis B virus. (You can use a few grains of rice compared to a box or cup of rice).

■ Ask: Which disease do you think would be easier to catch?

Motivational Messages

Would you invite a burglar with a crow bar into your house and allow him to SMASH . . .

■ *your refrigerator;* ■ *the food in your pantry;*
■ *the food processor;* ■ *the stove;*
■ *your garbage disposal system;*
■ *electric power;* ■ *and toilet???*

Would you be able to live in this house?

When you allow hepatitis B viruses to enter your body, you are inviting them in to destroy your own personal power plant, your liver, that serves as your. . .

■ *source of energy;* ■ *food processor;*
■ *pantry;* ■ *filter control and detoxifier;*
■ *garbage disposal and plumbing system;*
■ *protector and guardian angel.*

When all these systems are OUT OF ORDER, will you be able to function?

Like the burglar that destroys your home, viruses can destroy your liver and your life. Tragically, your liver has NO VOICE to call for HELP when it is being invaded and attacked by hepatitis viruses, drugs and alcohol.

What would happen to you if your own personal power plant didn't have enough healthy employees (liver cells) to perform their daily chores?

100 employees can't possibly perform as effectively as 100,000. Will your power plant slow down. . . and eventually, shut down?

Suppose you are the star athlete and your team's going in for the winning point. With only a few healthy employees (liver cells) left, are they going to be able to provide enough energy so you can win the game?

Are You going to be One of Life's Losers?

1·2·3 and you're out!

1 The first, and probably the only sign, that your liver is in trouble is fatigue, feeling tired, and loss of energy.

2 With an impaired liver, the toxins it is supposed to remove, remain in your blood and are carried to your brain. A sign of severe liver damage is mental confusion, because the toxins are affecting the brain. Can you imagine how you would feel if you couldn't remember where you lived or what your phone number was? This condition is called "encephalopathy".

3 In the final stage, with too few healthy liver cells to carry on, liver functions slow down. . . or shut down, completely. When this happens, the person goes into a coma, prior to dying.

The Choice is Yours

Who is the "manager" of your personal power plant?. . . Are you a good manager?. . . Do you let your employees starve?. . .

Become overwhelmed by poisons?. . . Have horrible working conditions?. . . Be attacked by viruses?. . . Suffer and die without a word of complaint?. . .

Who is the Loser?

Take control of your life. Your liver is your "guardian angel". It needs and deserves your TLC.

Steps to Maintain Good Health

1 Get vaccinated against hepatitis B to protect you and your liver from that virus. Make certain you get all three shots. The vaccine will protect you for 13 years and possibly a lifetime.

2 Don't have unprotected sex.

- Mucous membranes are the easiest places for viruses to enter your body.
- Anticipate and protect yourself.
- When you are infected, most people will be wary of having any contact with you. Decide whether a moment of pleasure is worth a lifetime of worrying about infecting those you care about, and possibly a lifetime of suffering from an infected liver.

3 Don't let anything enter your body that could be contaminated by hepatitis viruses.

- If the needles used for tattooing, body piercing, or injections of any kind, have not been sterilized under pressure in an autoclave, they could have live virus on them.
- Hepatitis B virus can live on a dry surface for two weeks.
- This virus can invade your body and cause you to get sick. Once infected, you can spread the disease to others through sex contact, and even living in the same household with family members.

4 Wash your hands with soap and water after using the bathroom.

A *healthy life* can be a *happier life*. The choice is yours . . . and yours alone.

Your liver will take care of you, *only if you take care of it.*

Talking to Tots

Information given children, especially about their own bodies, is readily absorbed. . . and shared with siblings, parents and friends. Children are wonderful teachers. We need to take advantage of this opportunity by providing them with valuable information that can help them make informed choices about avoiding liver damaging activities, and adopting healthful lifestyles including being vaccinated for hepatitis B.

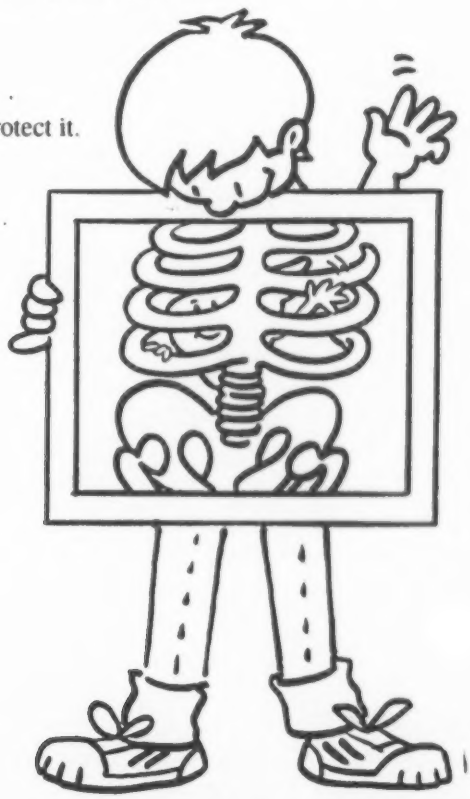
Purpose

The purpose of this program is to make children aware that they have a wonderful internal power plant and 'guardian angel' keeping them alive, alert and healthy that works 24 hours a day, non-stop. It takes care of them . . .and they have to learn how to take care of it.

To make this a reality, we use analogies they can relate to.

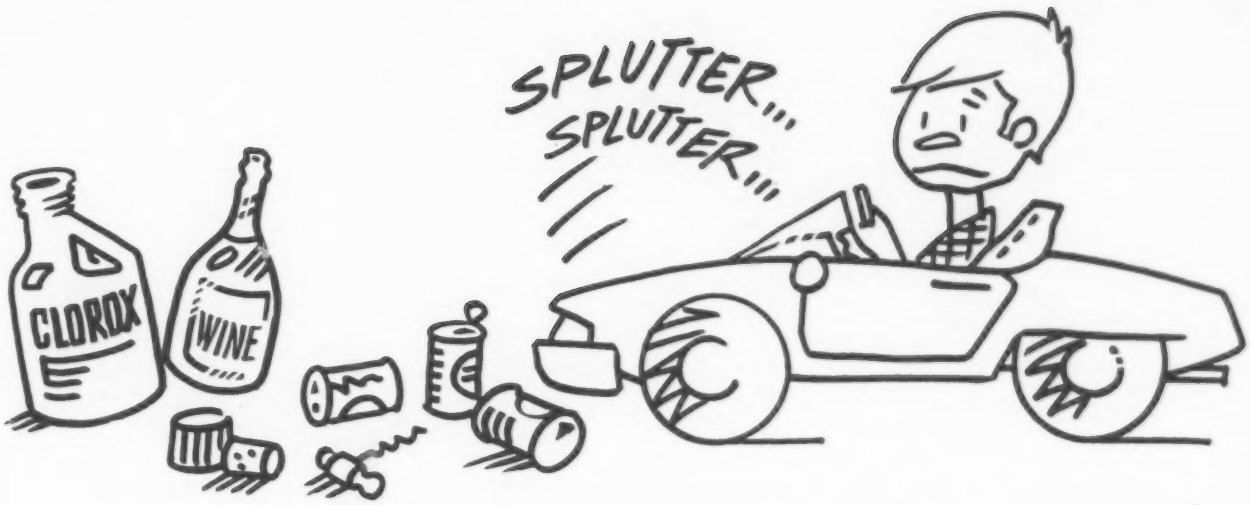
■ Where is the engine in your car?

Under a hood to protect it.



■ Where is your engine?

It's under a hood, too, called ribs.
It is your liver.
Your ribs protect it when you fall, are bumped or punched.



■ What do you put in the engine of your car to make it run?

What would happen if you put clorox, beer or wine in the engine? Would you be able to start the car to drive you to get a hamburger? Or would it chug and sputter and not move out of the driveway?

Your liver is your engine. It needs the right kind of 'fuel' to make it run smoothly. 'Fuel' for your liver means milk, juice, bread, chicken, eggs, vegetables, fruit and all the good things you eat.

What does a puppet look like when no one is holding the strings? Can it walk or dance? The strings make the arms and legs move.

What makes your arms and legs move? Muscles? How do you get muscles?

Did you know that your liver helps to make the protein needed to make muscles? It needs good food to be able to do that.

How does food get to your liver? ●●●●●●●●●●●●●●●●●●●●●●●▶

Activity

Hold up an apple and ask "How does the apple help to make muscles"?

When you eat an apple you chew it up and swallow it. It goes down to your stomach where it looks like applesauce. Inside your stomach there are millions of tiny blood vessels that pick up the applesauce and take it over to your liver. (Use your fingers to show the movement from the stomach to the liver).

In your liver there are millions of hard working liver cells, like Santa's Helpers, that turn the applesauce and other things you eat into proteins needed to make muscles and other important things your body needs.

It makes:

- clotting factors, a sticky substance like glue, that stop cuts from bleeding;
- immune factors that keep you from getting sick and help you get well when you are sick;
- bile to help you digest your food and get rid of toxins and bad chemicals in drugs, alcohol, and pollutants in the air; and
- thousands of other jobs that keep you alive, alert and healthy.

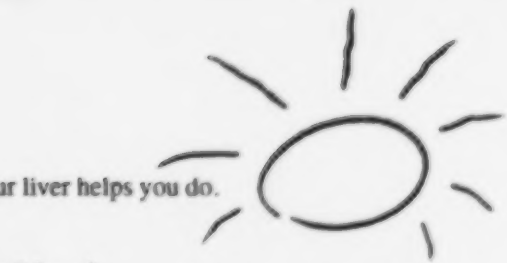
(You might want to remind the students that bile is the green liquid that tastes bad when they vomit. It acts like a detergent to break up the fats so their bodies can absorb them and gets rid of poisonous toxins they eat and breathe each day.)

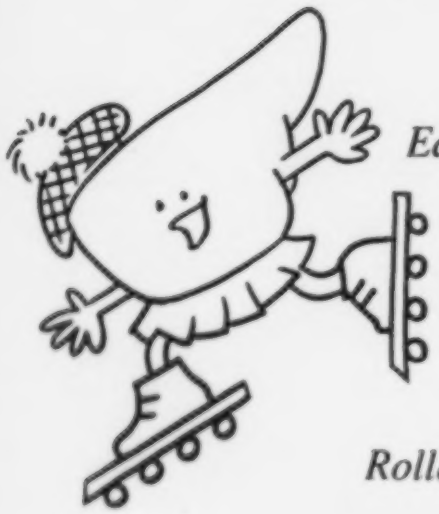
Your liver is your personal internal factory. It doesn't have a VOICE to CALL FOR HELP when it is sick or in trouble. It needs *you to take care of it* so it can do all the wonderful things it has to do. It works night and day with no holidays or vacation.

If you feed it alcohol or drugs (other than those your Mom or Dad give you) or let hepatitis viruses get in your body through needles or any other sharp instruments, like those used for tattooing or body piercing that have been used by someone else who might have hepatitis, or by touching their sores or blood, you are giving those things an opportunity to kill off your hard working liver cells and make you very sick.

Activity

List things you like to do each day that your liver helps you do.





Get out of bed

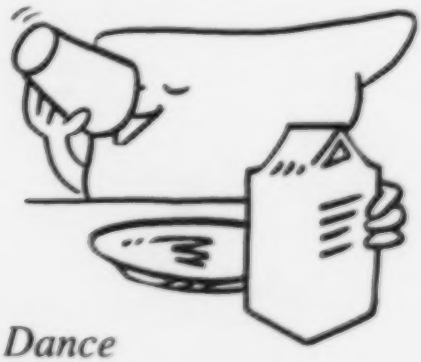
Eat breakfast, lunch and dinner

Play

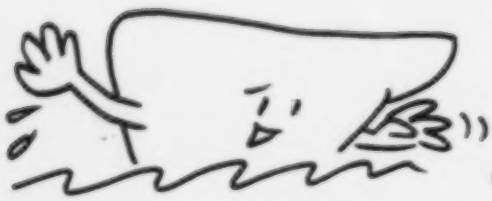
Ride a bike

Roller blade

Play games



Watch TV



Swim

Go to the park

Dance

Jump and skip

Run

Ride a roller coaster

Visit the zoo

Stay Well

Cross off the things you wouldn't be able to do if your liver cells were sick or dying because you used alcohol, drugs or caught hepatitis.

Activity

Make colorful headbands for each child, labeled with a liver function. Three children will have black bands with one labeled *"drugs"*; one, *"alcohol"*; and one, *"hepatitis virus"*. The children with the black bands will also have a pitcher full of Styrofoam peanuts.

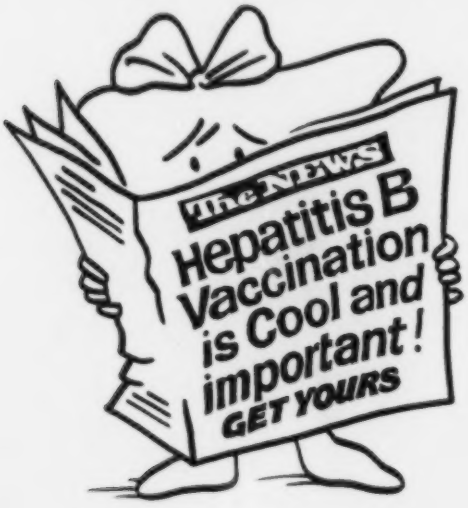
Each child, representing a liver function, will have to tell what function they represent: *energy, clotting factor, immune factor, muscle builder, etc.*

When all the children have stated their function, they dance around in a circle. The children with the black bands choose a *"victim"*, pour a few peanuts on the victim's head, at which point that victim falls on the floor, dead. This action is repeated until all the *"good liver functions"* are dead and only the drugs, alcohol and hepatitis virus remain standing.

This is a powerful message that the children can understand. Ask the children what this exercise means.

Review the liver functions listed in the 'Talk to Teens' section to reinforce the messages demonstrated here.

Steps to Maintaining Good Health

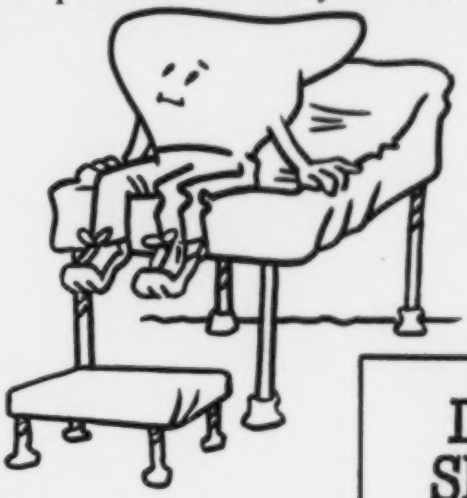


■ *Get vaccinated for hepatitis B to protect your liver from that virus;*

■ *Don't touch other peoples' blood, sores, rashes or blisters;*

■ *Don't drink wine, beer or other alcoholic drinks;*

■ *Don't take any drugs other than those your doctor prescribes or that your parents advise you to take;*



■ *Don't use toothbrushes, razors or nail clippers used by anyone else;*

■ *Wash your hands with soap and water after using the bathroom.*

Take care of your liver and it will take care of You!

	Hepatitis A (HAV)	Hepatitis B (HBV)	Hepatitis C (HCV)	Hepatitis D (HDV)	Hepatitis E (HEV,
What is it?	HAV is a virus that causes inflammation of the liver. It does not lead to chronic disease.	HBV is a virus that causes inflammation of the liver. The virus can cause liver cell damage, leading to cirrhosis and cancer.	HCV is a virus that causes inflammation of the liver. This infection can lead to cirrhosis and cancer.	HDV is a virus that causes inflammation of the liver. Only infects those with HBV.	HEV is a virus that causes inflammation of the liver. Rare in the US. There is no chronic state.
Incubation Period	15 to 50 days Average 30 days	4 to 26 weeks Average 8 to 12 weeks	2 to 26 weeks Average 7 to 9 weeks	4 to 26 weeks	2 - 9 weeks Average 40 days
How is it Spread?	Transmitted by fecal/oral route, through close person/person contact or ingestion of contaminated food and water.	Contact with infected blood, seminal fluid, and vaginal secretions. Sex contact, contaminated needles, tattoo/body piercing and other sharp instruments. Infected mother to newborn. Human bite.	Contact with infected blood, contaminated IV needles, razors, tattoo/body piercing and other sharp instruments. Infected mother to newborn. Is not easily transmitted through sex.	Contact with infected blood and contaminated needles. Sexual contact with HDV infected person.	Transmitted through fecal/ oral route. Outbreaks associated with contaminated water supply in other countries.
Symptoms	May have no symptoms. Adults may have light stools, dark urine, fatigue, fever and jaundice.	May have no symptoms. Some people have mild flu-like symptoms, dark urine, light stools, jaundice, fatigue and fever.	Same as HBV	Same as HBV	Same as HBV
Treatment of Chronic Disease	Not applicable.	Interferon is effective in up to 50% of those treated.	Interferon is effective in 10-20% of those treated.	Interferon with varying success.	Not Applicable
Vaccine	Two doses of vaccine to anyone over the age of two.	Three doses may be given to persons of any age.	None	None	None
Who is at Risk?	Household or sex contact with an infected person or living in an area area with HAV outbreak. Travellers to developing countries; homosexual men; and IV drug users and IV drug users.	Infant born to infected mother; having sex with infected person or multiple partners; IV drug users; emergency responders and healthcare workers; homosexual men; and hemodialysis patients.	Anyone who had a blood transfusion before 1990; healthcare workers; IV drug users; hemodialysis patients; infants born to infected mother; and multiple sex partners.	IV drug users; homosexual men; and those having sex with an HDV infected person.	Travellers to developing countries.
Prevention	Immune Globulin or vaccination. Wash hands after going to the toilet. Clean surfaces contaminated with feces, such as changing tables.	Vaccination and safe sex. Clean up any infected blood with bleach and wear protective gloves. Do not share razors or toothbrushes.	Safe sex. Clean up spilled blood with bleach. Wear gloves when touching blood. Do not share razors or toothbrushes.	Hepatitis B vaccine to prevent HBV infection. Safe sex.	Avoid drinking or using potentially contaminated water.

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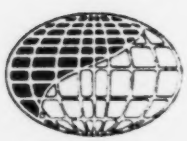

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